

Name _____
 Date _____ Period _____

 Unit 8: Polynomials
 Adding & Subtracting Polynomials Practice

 Write the polynomial in standard form, then name the degree and finally, classify the polynomial.

	<u>Standard Form</u>	<u>Degree</u>	<u>Classification</u>
1) $-2x^2 + 4x - 3x^5$	$-3x^5 - 2x^2 + 4x$	5	<u>Trinomial</u>
2) $x^4 - 2x^2 + 5x^4 - 7x^3$	$6x^4 - 7x^3 - 2x^2$	4	<u>Trinomial</u>
3) $4x - 5x^2$	$-5x^2 + 4x$	2	<u>Binomial</u>
4) $9x^3 - 2x^2 + 7x^2 - 8x^3 + x^5 - 4$	$9x^3 - 2x^2 + 7x^2 - 8x^3 + x^5 - 4$ $x^5 + x^3 + 5x^2 - 4$	5	<u>Polynomial</u>

Find the sum or difference.

5) $(x^2 - 4x + 3) + (3x^2 - 3x - 5)$

$$\begin{array}{r} x^2 - 4x + 3 \\ (+) 3x^2 - 3x - 5 \\ \hline 4x^2 - 7x - 2 \end{array}$$

6) $(-x^2 + 3x - 4) - (2x^2 + x - 1)$

$$\begin{array}{r} -x^2 + 3x - 4 \\ + -2x^2 - x + 1 \\ \hline -3x^2 + 2x - 3 \end{array}$$

7) $(-3x^2 + x + 8) + (x^2 - 8x + 4)$

$$\begin{array}{r} -3x^2 + x + 8 \\ (+) x^2 - 8x + 4 \\ \hline -2x^2 - 7x + 12 \end{array}$$

$$8) (5x^2 - 2x - 1) + (-3x^2 - 6x - 2)$$

$$9) (2x - 3 + 7x^2) - (3 - 9x^2 - 2x)$$

$$2x - 3 + \cancel{7x^2} + -3 + \cancel{9x^2} + 2x$$

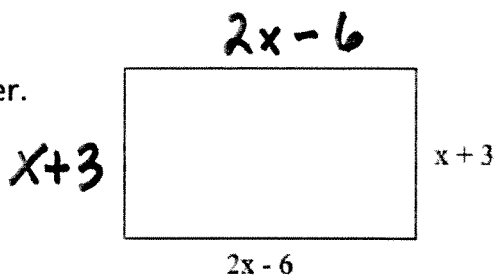
$$16x^2 + 4x - 6$$

$$10) (7x^2 + 3x) - (5x^2 + 4)$$

$$7x^2 + 3x + -5x^2 - 4$$

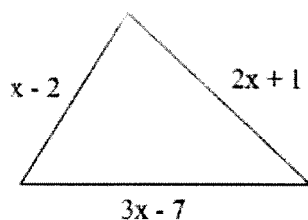
$$2x^2 + 3x - 4$$

11) Find the perimeter.



$$\begin{array}{r} 2x-6 \\ 2x-6 \\ x+3 \\ (+) x+3 \\ \hline 6x-6 \end{array}$$

12) Find the perimeter.



$$\begin{array}{r} 2x+1 \\ 3x-7 \\ (+) x-2 \\ \hline 6x-8 \end{array}$$

How Does an Illiterate Oil-Rich Sheik Sign His Name?

For each exercise below, add the polynomials. Find your answer at the bottom of the page and write the letter of that exercise above it.

③ 6×9

$$\begin{array}{r} 6x + 9 \\ x - 1 \end{array}$$

3X-4
⑤

$5x - 7$

① $8x^2 + 2x + 1$

$$\underline{x^2 - 4x + 7}$$

$$\textcircled{\text{H}} - 5x^2 - 5x + 3$$

$$6x^2 - x$$

① $(7x^2 + 3x + 9) + (2x^2 + 5x - 2)$

$$(-3x^2 + x - 7) + (8x^2 - 4x - 4)$$

Ⓔ $(6x^3 + 2x^2 - 3x) + (3x^3 - 10x^2 - x)$

Ⓔ $(-4x^3 + 6x + 1) + (5x^2 - x - 12)$

$$\textcircled{\text{H}} \quad (9x^3 - x^2 + 8) + (-9x^3 + 2x^2 + 3x)$$

①

$$(2x^4 + 5x^2 - 11) + (-6x^4 - 7x^2 + 1)$$



$$(-4x^4 + 3x^3 - 7x^2 - x) + (-9x^3 + 7x^2 - 5x - 1)$$

②

$$(4x^2 + 3xy - y^2) + (x^2 - 8xy - 2y^2)$$

②

$$(2x^2y - xy^2) + (6x^2y + 7xy^2)$$

⊗

$$x^3y + 3x^2y^2 + 2xy^3 + (2x^3y - 9x^2y^2 - xy^3)$$

	$x^2 - 6x + 3$
	$-4x^3 + 5x^2 + 5x - 11$
	$-4x^3 + 5x^2 - 3x - 1$
	$5x^2 - 5xy - 3y^2$
	$9x^2 + 8x + 7$
	$-4x^4 - 2x^2 - 10$
	$8x - 11$
	$5x^2 - 5xy - 11$
	$x^2 + 3x + 8$
	$9x^2 - 2x + 8$
	$9x^3 - 8x^2 - 4x$
	$8x^2y - 3xy^2$
	$7x + 8$
	$3x^3y - 6x^2y^2 + xy^3$
	$-4x^4 - 6x^3 - 6x - 1$
	$5x^2 - 3x - 11$
	$8x^2y + 6xy^2$

Definition Decoder

1. Romantic:

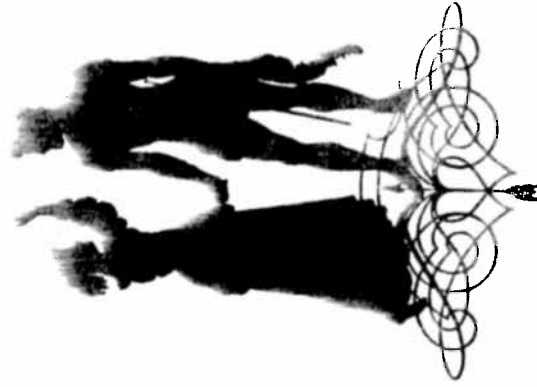
11	13	8	12	11	1	8	11	13	8	13	10	3	5	12
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2. American:

11	2	11	9	9	6	5	7	13	12	11	8	13	3	4
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For each exercise below, subtract the second polynomial from the first. Find your answer in the answer column and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it. Keep working and you will decode the "de-fun-itions."

- ① $(7x + 4) - (2x + 9)$
- ② $(3x + 12) - (5x - 6)$
- ③ $(-4x^2 + 10) - (6x^2 - 9)$
- ④ $(2x^2 + 3x + 8) - (x^2 + 5x - 1)$
- ⑤ $(-x^2 + 9x - 2) - (9x^2 - 4x + 4)$
- ⑥ $(3x^2 + 7x + 1) - (8 + 5x + x^2)$
- ⑦ $(4x^3 + 6x^2 - 8x) - (x^3 - 2x^2 + 12x)$
- ⑧ $(x^3 + 2x^2 + 5x) - (3x^2 - x - 7)$
- ⑨ $(x^4 + 8x^2 - 1) - (x^2 - 3x^3 + x^4)$
- ⑩ $(5x^4 - 2x^2) - (3x - 2x^2 - 4x^3 + 6x^4)$
- ⑪ $(3x^2 + 7xy - 2y^2) - (x^2 - 6xy + 2y^2)$
- ⑫ $(-x^2 - 9xy + 5y^2) - (4x^2 - 2xy - y^2)$
- ⑬ $(4x^2y - 3xy^2) - (3x^2y - 8xy^2)$



Answers:

- | | | | |
|-----|----------------------|-----|----------------------|
| (M) | $-x^4 + 4x^3 - 7x^2$ | (E) | $-10x^2 + 19$ |
| (S) | $-x^4 + 4x^3 - 3x$ | (F) | $2x^2 + 2x - 19$ |
| (U) | $3x^3 + 5x^2 + 7$ | (C) | $-10x^2 + 13x - 6$ |
| (L) | $5x - 5$ | (H) | $-2x + 18$ |
| (T) | $-5x^2 - 7xy + 6y^2$ | (O) | $3x^3 + 8x^2 - 20x$ |
| (P) | $3x^3 + 7x^2 - 1$ | (R) | $x^2 - 2x + 9$ |
| (A) | $2x^2 + 13xy - 4y^2$ | (N) | $x^2y + 5xy^2$ |
| (Y) | $2x^2 + 2x - 7$ | (B) | $-5x^2 - 6xy + 7y^2$ |
| (I) | $x^3 - x^2 + 6x + 7$ | | |